

STUDIES OF NEOTROPICAL CADDIS FLIES, IX: NEW GENERA AND SPECIES FROM THE CHILEAN SUBREGION  
(TRICHOPTERA)

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ABSTRACT—Three new genera and 17 new species are described and illustrated from Chile.

During the last few years, several collections of Chilean Trichoptera have been received at the United States National Museum. In these collections I have found a surprising number of apparently undescribed species and genera. These new entities, three genera (one each in the Rhyacophilidae, Tasimiidae, and Sericostomatidae) and 17 species, are described on the following pages. In addition the family Tasimiidae, recently described from Australia, is recorded from Chile, and the genera *Trichovespula* Schm. and *Charadropsyche* n. gen. are placed in it.

I wish to express my sincerest appreciation to Sres. Luis E. Peña G. and Tomas Cekalovic K., who not only supplied much of this material, but also guided me to excellent collecting localities on my trips to Chile.

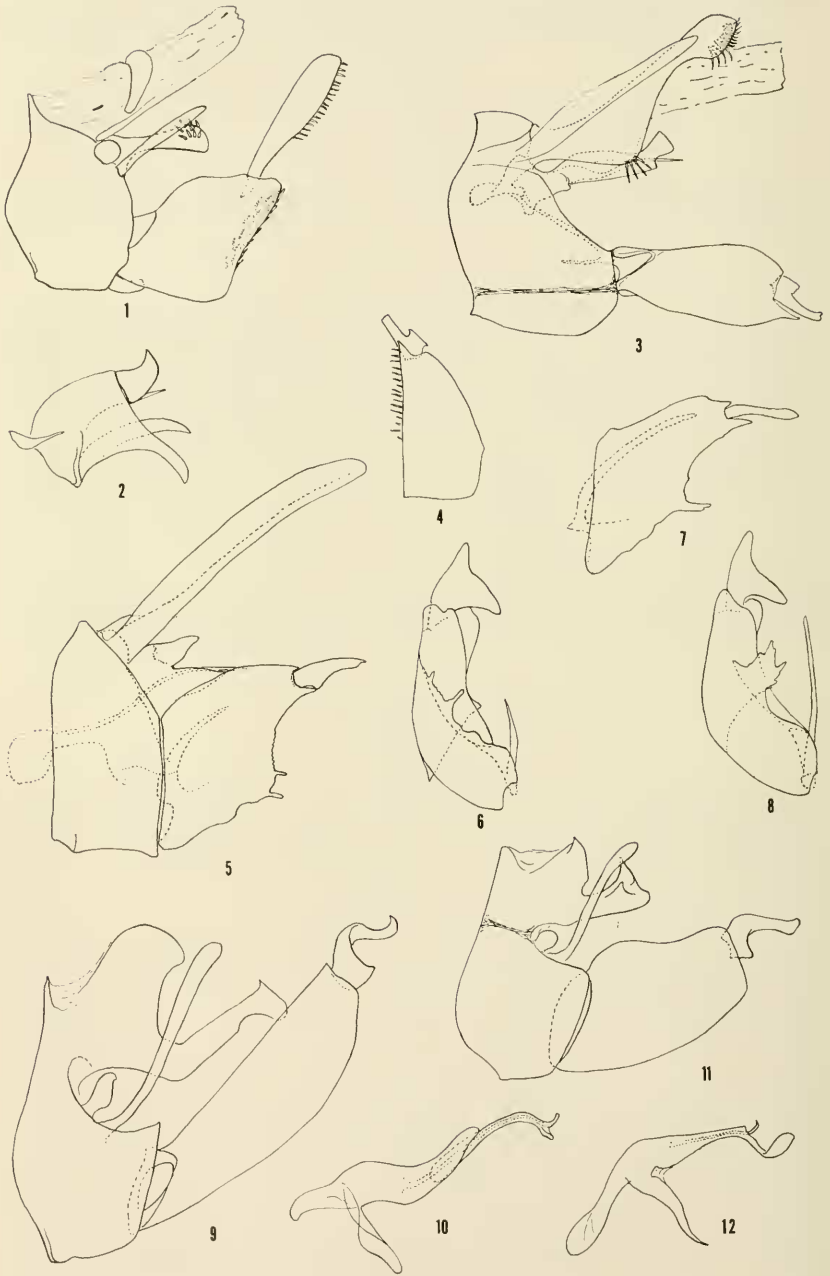
RHYACOPHILIDAE

*Clavichorema purgatoria*, n. sp.

(Figs. 1-2)

This species is related to *C. capillata* Schm. It may be recognized by the shape of the clasper whose basal segment is not prolonged apically, and whose apical segment is as long as the basal segment, and by the shape of the various parts of the aedeagus.

Adult.—Length of forewing, 7 mm. Greyish-brown; forewing apically with alternating bands of paler and darker pubescence. Fifth sternum with a pair of anterolateral processes about  $\frac{3}{4}$  as long as segment. Seventh sternum with a broad apicomeral process about as long as eighth sternum. Male genitalia: Ninth segment posteriorly with a pair of short, terete processes between clasper bases. Tenth tergum mostly membranous, ventral surface lightly sclerotized, with a transverse band at midlength. Paracercus terete, slightly enlarged apically; apex with a group of enlarged, short setae. Filicercus slender, terete, subequal in length to paracercus. Cercus round. Clasper two-segmented: basal segment large, roughly quadrate, posteromesal face with enlarged, short setae; apical segment clavate, as long as basal segment, posteromesal face with enlarged, short setae. Aedeagus with a short tubular base, apicodorsally with a pair of short, upturned, heavily sclerotized plates with a slender tube between them, with a central, trough-shaped sclerite, ventrolateral angles produced into long, decurved processes.



Holotype, male.—Chile, Prov. Nuble, Cord. Chillan, El Purgatorio, 3 Mar. 1968, Flint & Peña. USNM 70418.

***Microchorema larica*, n. sp.**

(Figs. 3–4)

This species shows its closest relationship to *M. extensa* Schm., from which it differs in many details in the male genitalia. Most parts of the genitalia are much less elongated, especially the claspers and aedeagus, the paracercus is enlarged midventrally and the apex bears a specialized setal pocket.

The paratype shows several quantitative differences from the holotype: the paracercus has a much narrower midventral lobe and the apical knob is more elongate, the basal clasper segment is shorter (only about 1½ times as long as broad) with the apicoventral point and ventral process of the apical segment much more elongate. However, the basic structure is the same throughout, and for this reason I believe that these differences are the result of geographic variation.

Adult.—Length of forewing, 7–8 mm. Color almost uniformly brown, specimens mostly denuded. Fifth sternum with an anterolateral process, basal portion enlarged, apical portion whiplike, total length barely longer than sternum. Seventh sternum with a very long midventral process, almost twice as long as sternum. Male genitalia: Ninth segment widened ventrolaterally, with a longitudinal ventrolateral brace. Tenth tergum an elongate, terete, membranous structure. Filicercus elongate, slightly widened basad. Paracercus heavily sclerotized, with a midventral flap bearing from its inner surface a group of spinose setae; apex enlarged, with a pocket bearing a cluster of spinose setae. Clasper two-segmented: basal segment slightly more than twice as long as broad, slightly inflated apically, with a point beneath apical segment and a row of spines mesally; apical segment broad basally with an apicoventral process. Aedeagus with a complex base, and a pair of long slender supports to base of clasper, apex tubular with a pair of apical dorsolateral flaps, and a pointed internal tubule.

Holotype, male.—Chile, Prov. Cautin, 30 km. NE of Villarrica, 16–31 Dec. 1964, L. E. Peña G. USNM 70419. Paratype: Prov. Arauco, Caramavida, 3–31 Jan. 1967, L. E. Peña G., 1♂.

***Neotopsyche obliqua*, n. sp.**

(Figs. 5–8)

This species is clearly related to *N. unispina* Flint. It differs in the structure of the filicercus, in which the mesal lobe extends to the end

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Figs. 1, 2. *Clavichorema purgatoria*, n. sp.: 1, ♂ genitalia, lateral; 2, aedeagus, lateral. Figs. 3, 4. *Microchorema larica*, n. sp.: 3, ♂ genitalia, lateral; 4, clasper, ventral. Figs. 5–8. *Neotopsyche obliqua*, n. sp.: 5, ♂ genitalia, lateral; 6, clasper, ventral; 7, clasper of paratype (Salto de Laja), lateral; 8, same, ventral. Figs. 9, 10. *Neochorema lobiferum*, n. sp.: 9, ♂ genitalia, lateral; 10, aedeagus, lateral. Figs. 11, 12. *N. jaula*, n. sp.: 11, ♂ genitalia, lateral; 12, aedeagus, lateral.

of the segment, in the shape of the mesobasal spine of the clasper, and in the mesoventral shelf of the clasper which is very narrow and oblique.

Adult.—Length of forewing, 8 mm. Color pale brown; forewing with ill-defined, oblique, darker bands, anal margin nearly white. Sixth sternum with a terete apicomesal process almost  $\frac{3}{4}$  as long as segment. Seventh sternum with a broad, nail-like apicomesal process about  $\frac{1}{3}$  length of sternum. Male genitalia: Filicercus long, with mesal lobe extending to apex. Paracercus with dorsal lobe divided mesally, forming a short, auriculate, dorsolateral process, ventral lobe lightly sclerotized, extending slightly beyond dorsal lobe. Tenth tergum membranous, cylindrical, as long as filicercus. Clasper two-segmented: basal segment rather quadrate to elongate (in paratype), with a short process beneath apical segment; ventromesal shelf with several points, variable in detail, in ventral aspect very narrow and oblique; basomesal spur simple and directed posteriorly; apical segment narrow, in ventral aspect with basomesal angle strongly developed. Aedeagus with a ventromesal process articulating with clasper bases, a basal portion which gives rise to a single, long, slender spine extending from apex of the aedeagus.

Holotype, male.—Chile, Prov. Aconcagua, SW Catapilco, 30 Sept. 1964, L. E. Peña G. USNM 70420. Paratypes: Prov. Valdivia, Llifén, Lago Ranco, 5 Mar. 1967, T. Cekalovic K., 1 ♂. Prov. Bio-Bio, Salto de Laja, 17–18 Apr. 1966, L. E. Peña G., 2 ♂ ♂.

***Neochorema lobiferum*, n. sp.**

(Figs. 9–10)

This species is related to both the type-species, *N. dictynnum* Schm., and the following new species. From both it is easily distinguished by the arched tenth tergum, by the presence of an apicoventral lobe on the paracercus, by the much longer basal clasper segment, and the very differently shaped apex of the aedeagus.

Adult.—Length of forewing, 11 mm. Color brown; legs, antennae, and venter pale brown, forewings a rather uniform pale brown with a few indistinct flecks. Sixth sternum with an apicoventral process about  $\frac{2}{3}$  length of segment. Male genitalia: Ninth segment produced into a sharp lateral point. Tenth tergite heavily sclerotized, arched and rounded. Paracercus arising from ventrolateral angle of tenth tergum, elongate, tip rounded and angled ventrad, with a small subapical, dorsal point. Filicercus long and slender. Cercus auriculate. Clasper two-segmented: basal segment long and narrow, about 3 times as long as broad; apical segment broad basally, with a slender, twisted, dorsomesal process. Aedeagus with a ventral process articulating with clasper bases, with a short basal segment, and a terete, sinuous, apical segment giving rise to a tube whose tip bears a dorsal spine and an internal tubule.

Holotype, male.—Chile, Prov. Cautín, 30 km NE Villarrica, 1–30 Jan. 1965, L. E. Peña G. USNM 70421.

***Neochorema jaula*, n. sp.**

(Figs. 11-12)

This is the third species of the group containing *N. dictynnum* Schm. and the preceding species. There are a number of very noticeable differences throughout the genitalia, the most striking being the dorsally directed point of the tenth tergum, however the shorter paracercus with apicodorsal and apicolateral points, and the short basal clasper segment which tapers apically are also distinctive.

Adult.—Length of forewing, 9 mm. Color brownish; legs slightly paler, forewings brownish, with scattered paler spots paralleling wing margin at midlengths of apical cells. Sixth sternum with apicomesal process about half length of sternum. Male genitalia: Ninth segment rounded anteriorly, posterolateral margin produced slightly over base of clasper. Tenth tergite heavily sclerotized, produced into a dorsally directed apical point. Paracercus arising from ventrolateral angle of tenth tergite, short, with pointed subapical projections dorsally and laterally. Filicercus erect, filamentous. Cercus buttonlike. Clasper two-segmented: basal segment broadest basally, about  $\frac{3}{4}$  as broad as long; apical segment broad at base, with apicodorsal process directed mesally. Aedeagus with a slender ventral projection articulating with bases of claspers, a basal portion, and a slender tubular apical portion with an internal tubule that projects apically as an upturned hook, beyond which the apex is decurved and developed into a pair of spoonlike appendages.

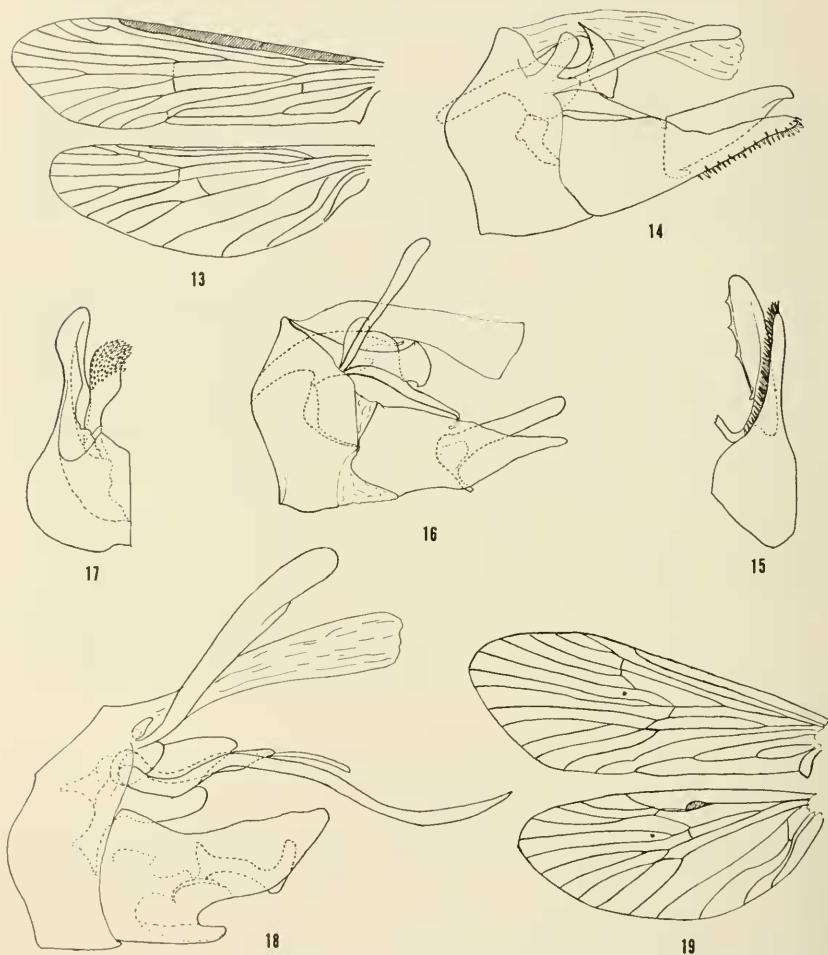
Holotype, male.—Chile, Prov. Curico, Estero la Jaula, Los Quenes, 4-18 Jan. 1964, L. E. Peña G. USNM 70422. Paratype. Same, but 14-18 Feb. 1965, 1♂.

***Parachorema costiferum*, n. sp.**

(Figs. 13-15)

I am placing this and the following species in *Parachorema* in spite of several rather striking differences in the male genitalia between these species and the type-species, *P. bifidum* Schm. However, the venation in all species of *Parachorema* is essentially identical, and all possess a narrow reflexed costal cell which bears internally a row of scalelike setae. The male genitalia of all agree in the general form of the tenth tergum, cercus, filicercus, and in possessing two-segmented claspers whose apical segments are more or less bifid. *P. bifidum*, however, bears an additional two pairs of lobes in the cercal region, has its paracercus divided into dorsal and ventral lobes, and has a rather differently constructed aedeagus. These characteristics seem to point toward a single genus with two rather divergent species groups.

*P. costiferum* is, as pointed out above, much more closely related to the following new species than to the type-species. From *zotheculum*, n. sp., it is easily separated by the high apicodorsal point of the



Figs. 13-15. *Parachorema costiferum*, n. sp.: 13, wings; 14, ♂ genitalia, lateral; 15, clasper, ventral. Fig. 16. *P. zotheulum*, n. sp.: ♂ genitalia, lateral. Figs. 17-19. *Pomphochorema chilensis*, n. gen., n. sp.: 17, clasper, ventral; 18, ♂ genitalia, lateral; 19, wings.

paracercus, middorsal knob of the aedeagus, and broader apical segment of the clasper.

Adult.—Length of forewing, 9-10 mm. Color dark brown; a paler middorsal stripe on head and thorax, legs yellowish, forewing dark brown with a curved row of paler spots at midlength of apical cells, basal region with several paler flecks, apical fringe dark with pale flecks at end of each vein. Longitudinal veins of forewings with basal portions bearing erect enlarged setae,  $R_{2+3}$  with especially

heavy brush of these setae. Forewing with an elongate, narrow, reflexed costal cell opening dorsally, internally with a row of short, scalelike setae. Sixth sternum with apicoventral process about  $\frac{2}{3}$  length of sternum; seventh sternum with a broad, nail-like process. Male genitalia: Ninth segment broadest laterally, unmodified. Tenth tergum membranous, slightly enlarged apically. Filicercus long, and filamentous; cercus about twice as long as wide. Paracercus short, heavily sclerotized, developed into a strong, pointed, apicodorsal process. Clasper two-segmented: basal segment elongate, produced beneath apical segment, with apicoventral margin bearing elongate, flattened setae; apical segment elongate, with a small mesobasal hook, dorsomesal margin with a row of small points. Aedeagus with a midventral sclerite articulating with clasper bases, a short, indistinct basal section terminating in rounded dorsal lobes, and a pair of slender, contiguous, apicoventral processes.

Holotype, male.—Chile, Prov. Cautin, near Pucon, 4 Jan. 1966, Flint & Cekalovic. USNM 70423. Paratypes.—Same data, 1♂ 5♀. Prov. Curico, Estero la Jaula, Los Quenes, 4–18 Jan. 1964, L. E. Peña G., 1♂, 1♀.

***Parachorema zotheculum*, n. sp.**

(Fig. 16)

This species is very closely related to the species just described. From this it is distinguished by the lack of large dorsal hook at the apex of the paracercus, the lack of the middorsal knob on the aedeagus, and in possessing a narrower apical segment of the clasper.

Adult.—Length of forewing, 9 mm. Color pale brown (mostly denuded); forewing slightly darker, spotted with yellowish. Costal cell broadest basally, very narrow beyond, with a row of internal scales. Venation as in the previous species except, in forewing, where  $R_5$  is much longer and  $R_{2+3}$  is very short. Sixth sternum with apicomeral process about half as long as sternum; seventh sternum with a short nail-like process. Male genitalia: Ninth segment broadest laterally, semimembranous apicoventrally. Tenth tergum membranous, slightly enlarged apically. Filicercus long, filamentous; cercus about twice as long as broad. Paracercus elongate, enlarged apically, with a small subapical point dorsally and another ventrally. Clasper two-segmented: basal segment elongate, tapering to an apicolateral point; apical segment arising mesally, terete, with a basoventral hook. Aedeagus with midventral sclerite articulated to clasper base, a rounded basal portion, central tubular part with a thin central tubule and with apicoventral angles prolonged into a pair of slender curved blades ending in slender hooked apices.

Holotype, male.—Chile, Prov. Nuble, Rio Teno, 25–27 Jan. 1968, L. E. Peña G. USNM 70424.

***Pomphochorema*, n. gen.**

Forewing venation:  $R_{2+3}$  forked nearer wing margin than  $R_{4+5}$ ; basal portion of  $M_1$  fused to base of  $R_5$  for a short distance, r-m thus lost; with basal portion of

Cu<sub>1a</sub> fused to M<sub>3+4</sub> for a short distance, m-cu thus lost. Hindwing venation: Sc and R<sub>1</sub> approximate, with a strong pocket developed at midlength, R<sub>2+3</sub> forked slightly beyond R<sub>4+5</sub>; basal portion of Cu<sub>1a</sub> fused for a short distance to M<sub>3+4</sub>. Male genitalia: Tenth tergum a long terete, membranous lobe; filicercus large and semierect, paracercus long, and slender; clasper two-segmented with apical segment arising mesally; aedeagus with a central tube surrounded by a hoodlike structure basally.

Type species: *Pomphochorema chilensis*, n. sp.

This genus and species is not clearly related to any other known Chilean form. The capture of the anterior branches of M and Cu<sub>1</sub> by the next anterior vein is unique, as is the bulla on Sc and R<sub>1</sub> of the hindwing. One is tempted to believe that this venation is due to an aberration in this specimen, but I do not believe this is the case as the wings on both sides are symmetrical. There is a slight similarity in the structure of the genitalia to *Neotopsyche*, especially in the large, erect filicercus, terete tenth tergum, and aedeagus and associated parts. Yet the long sinuate process, clearly arising from the cercal region is lacking in *Neotopsyche*, and the claspers seem quite different in the two genera.

***Pomphochorema chilensis*, n. sp.**

(Figs. 17-19)

The genitalia of the only known specimen are somewhat damaged: the filicercus and cercus are lost on one side and the paracercus on the other. There is however a definite tear on the side lacking the filicercus. The illustration of the genitalia shows the paracercus restored in the manner in which it is borne on the opposite side.

Adult.—Length of forewing, 15 mm. Color brown (specimen nearly denuded); head and thorax somewhat darker, legs yellowish brown, forewing nearly uniformly brown, apical cells with an indistinct band of pale cells at midlength, hindwing hyaline. Fifth segment with a terete process laterally, as long as segment. Seventh sternum with an apicomeral process about  $\frac{1}{2}$  as long as sternum. Male genitalia: Ninth segment with anterior and posterior margins nearly parallel. Tenth tergum membranous, terete, and elongate. Filicercus semierect, slightly widened apically, about as long as tenth tergum. Cercus small, ovate. Paracercus very long, slender, sinuate, and heavily sclerotized. Clasper two-segmented: basal segment developed apicodorsally, with a ventral lobe, and with a large mesal pouchlike invagination; apical segment arising from pouch, apex upturned and bearing many scabrous setae. Aedeagus with a ventral process articulating with bases of claspers, with a short basal portion, with a pair of dorsolateral plates and a ventromesal lobe distad of ninth segment, with a long central tube bearing an internal tubule.

Holotype, male.—Chile, Prov. Arauco, Caramavida, 3-31 Jan. 1967, L. E. Peña G. USNM 70425.



## PHILOPOTAMIDAE

**Dolophilodes (Sortosa) spinosella**, n. sp.

(Figs. 20-21)

This species clearly belongs to the *flavipunctata* group, yet stands apart from the other species in the group. All the other known species in the group bear from 2 to 12 short spines in the aedeagus; *D. spinosella* bears a pouch filled with setae. The shape of the claspers and tenth tergum are also distinctive, although both are of the same plan as the other species in the *flavipunctata* group.

Adult.—Length of forewing, 8 mm. Color brown; forewing with many flecks of golden hair. Seventh and eighth sterna with broad apicomeral processes, process of eighth segment less than half that of seventh segment. Eighth tergum with a depressed region, with a U-shaped apicomeral excision. Male genitalia: Ninth segment with anterolateral margin produced into a large, rounded lobe. Tenth tergum elongate, with a narrow neck, apex elevated and enlarged dorsally; with two pairs of sensillae basally and 3 or 4 pairs apically. Cercus elongate, tapering, arising from dorsolateral angle of ninth segment, about  $\frac{1}{2}$  length of tenth tergum. Clasper with basal segment about as long as broad, dorsal margin angulate, mostly fused mesally; apical segment with apicoventral angle prolonged, posterior margin very oblique, with an elongate row of spicules on apicomeral face. Aedeagus bulbous basally, with a large internal sac lined with spiniform setae.

Holotype, male.—Chile, Prov. Curico, Estero la Jaula, Los Quenes, 14-18 Feb. 1965, L. E. Peña G. USNM 70426.

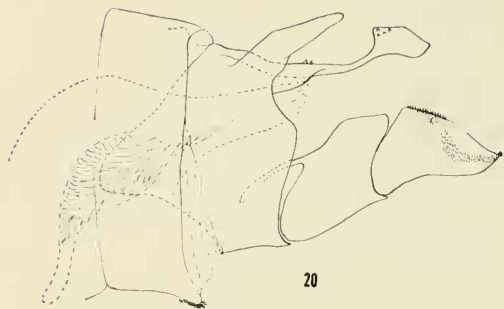
**Dolophilodes (Sortosa) paxillifera**, n. sp.

(Figs. 22-23)

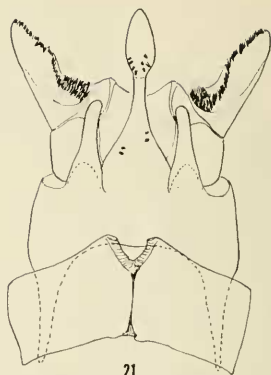
This species is closest to *S. edwardsi* Ross of the *flavipunctata* group, as is shown by the shape of the claspers, eighth tergum, and cerci. However, in *paxillifera* the tenth tergum is much more elongate and not enlarged apically, and the aedeagus bears 7 short, broad spines, rather than 2 more elongate spines.

Adult.—Length of forewing, 7 mm. Color brown; forewing with many small golden spots. Seventh sternum with a very short, broad apicomeral process; eighth sternum lacking process. Eighth tergum with a depressed, and slightly produced structure apicomerally. Male genitalia: Ninth segment with anterior margin produced into a long and rather narrow lobe. Tenth tergum elongate and narrow, apex elevated, but not enlarged; dorsally bearing many sensillae. Cercus elongate, tapering, arising from dorsolateral angle of ninth segment, about half length of tenth tergum. Clasper with basal segment angled slightly dorsad, mostly fused mesally; apical segment rounded apically, shorter than basal segment, with a trianguloid apicomeral patch of spicules. Aedeagus with a bulbous base, with 7 short, thick, black, spines internally.

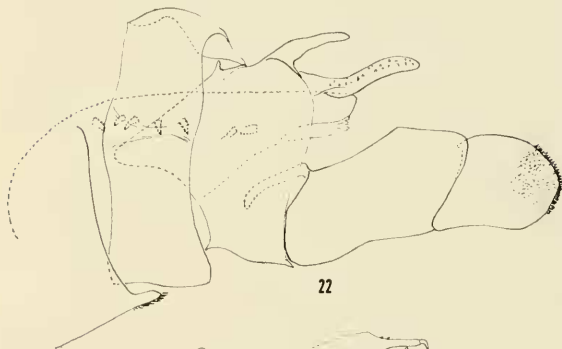
Holotype, male.—Chile, Prov. Malleco, Curacautin, Rio Blanco, Feb. 1964, L. E. Peña G. USNM 70427.



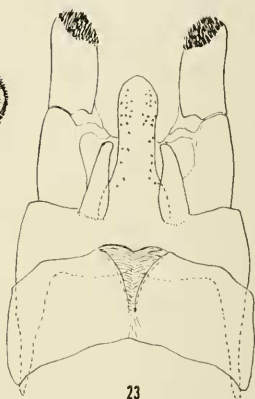
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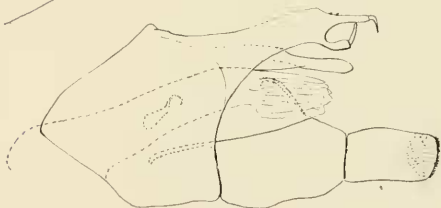
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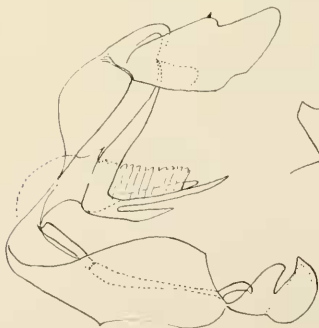
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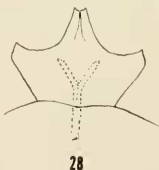
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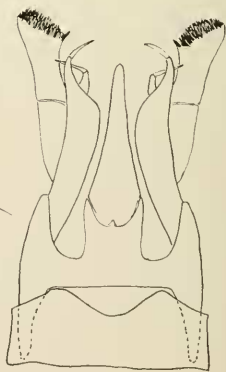
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***Dolophilodes (Sortosa) bifida*, n. sp.**

(Figs. 24–25)

This is a very isolated species in the genus. It is perhaps distantly related to *D. pectinifer* Schm. which possesses a very similar tenth tergum and elongate, spine-bearing cerci, but differs greatly in the details of the cerci and claspers.

Adult.—Length of forewing, 5 mm. Color in alcohol, uniformly brown. Seventh sternum with a short apicomeral process; eighth sternum lacking process. Eighth tergum with a simple, broad, apicomeral excision. Male genitalia: Ninth segment produced anterolaterally. Tenth tergum elongate, tapering, unmodified. Cercus slightly longer than tenth tergum, broad, apex bifid, each projection bearing a stout spine. Clasper with basal segment slightly less than twice as long as broad, mostly fused mesally; apical segment quadrate,  $\frac{3}{4}$  as long as broad with an apicomeral patch of black spicules. Aedeagus slightly inflated basally, with a long, curved internal spine apically, and a pair of lightly sclerotized apico-dorsal rods.

Holotype, male.—Chile, Prov. Concepcion, Quebrada Pinares, near Concepcion, 18 Feb. 1967, T. Cekalovic K. USNM 70428.

## PSYCHOMYIIDAE

***Austrotinodes cekalovici*, n. sp.**

(Figs. 26–28)

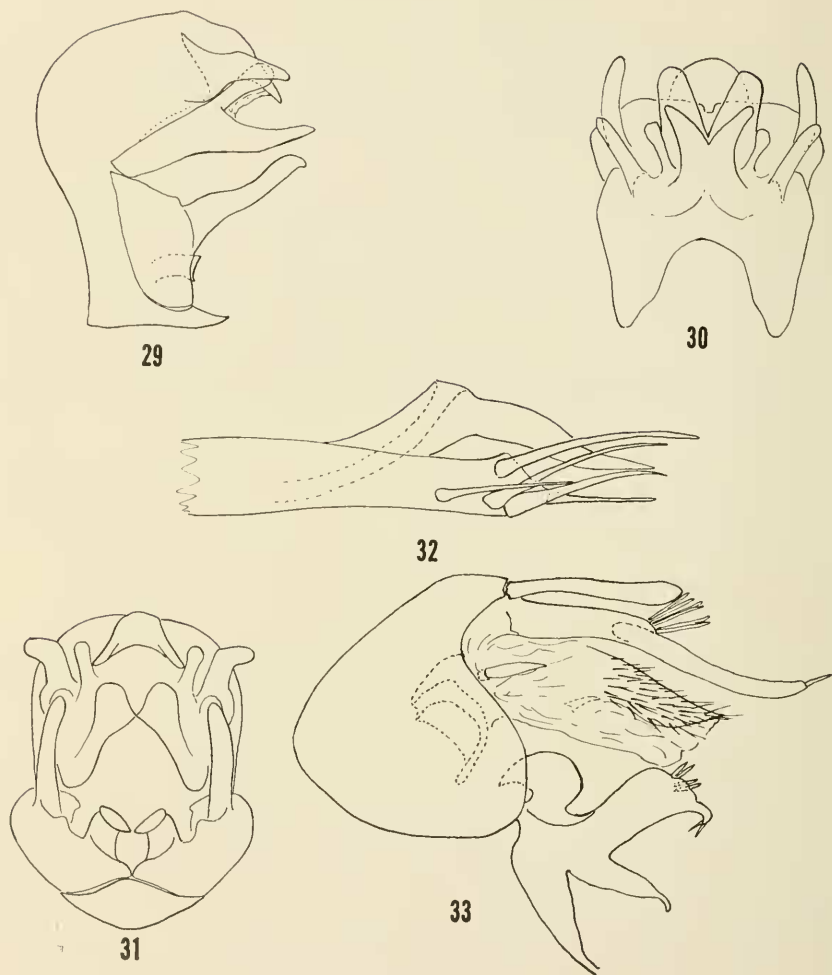
This is another distinctive species of *Austrotinodes*, and is perhaps related to *A. latior* Schm. From this and all other species of the genus, it is easily distinguished by the very different shape of the claspers.

Adult.—Length of forewing, 5.5 mm. Color brown; forewing covered with goldenbrown hairs. Male genitalia: Ninth segment deeply divided laterally, with ventral portion enlarged and prolonged posteriad. Tenth tergum a small membranous lobe basally between cerci. Cercus broad, elongate, rounded apically, with mesal face bearing several dark teeth. Claspers fused mesally, with basolateral winglike lobes, a compressed apical lobe pointed dorsally, and a terete, forked structure basally. Aedeagus with a long, thin dorsal process articulating with cerci basomesally, with a pair of elongate, pointed ventral processes, and an apicomeral membranous tube with a pair of internal spines.

Holotype, male.—Chile, Prov. Cautin, Puente Hilquilco, south of Quepe, 4 Jan. 1966, Flint & Cekalovic. USNM 70429. Paratype.—Prov. Valdivia, Rio las Cruces, Lanco, 5 Jan. 1966, Flint & Cekalovic, 1♂.

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Figs. 20, 21. *Dolophilodes (Sortosa) spinosella*, n. sp.: 20, ♂ genitalia, lateral; 21, same, dorsal. Figs. 22, 23. *D. (S.) paxillifera*, n. sp.: 22, ♂ genitalia, lateral; 23, same, dorsal. Figs. 24, 25. *D. (S.) bifida*, n. sp.: 24, ♂ genitalia, lateral; 25, same, dorsal. Figs. 26–28. *Austrotinodes cekalovici*, n. sp.: 26, ♂ ninth and tenth terga and cerci, dorsal; 27, ♂ genitalia, lateral; 28, claspers, ventral.



Figs. 29-32. *Monocosmoecus aberrans*, n. sp.: 29, ♂ genitalia, lateral; 30, same, dorsal; 31, same, posterior; 32, aedeagus, lateral. Fig. 33. *Brachysetodes nublense*, n. sp.: ♂ genitalia, lateral.

LIMNEPHILIDAE

*Monocosmoecus aberrans*, n. sp.

(Figs. 29-32)

The generic placement of this species is somewhat problematical. The wing shape is intermediate between *Monocosmoecus* and *Magellomyia*, the anastomosis is angled inwardly as in *Magellomyia*, but r-m

in the hindwing is attached to  $M_1$  as it is in *Monocosmoecus*. The vein  $R_{2+3}$  is forked much more deeply in the forewing than in either of the two aforementioned genera; in fact, the venation as a whole looks much like that of *Antarctoecia*. The male genitalia however, are totally different from those of the last genus, but do have several points in common with those of *Monocosmoecus*. For this reason primarily, I am placing the species in *Monocosmoecus*.

From all described species of *Monocosmoecus*, *aberrans* is easily recognized by the forked dorsomesal process of the genitalia, the large structure arising laterally and produced beneath the forked process, and the spinose lateral processes of the aedeagus.

Adult.—Length of forewing, 16 mm. Color nearly uniformly reddish brown; forewing with veins slightly darker, a white membranous spot just before basal furcation of M and where 1A turns toward wing margin. Male genitalia: Ninth segment rounded anterolaterally, produced ventrally between claspers as a thumb-nail-like process; dorsomesally giving rise to a deeply divided, heavily sclerotized process whose tips are divergent. Cercus united to dorsolateral angles of ninth segment, narrow, elongated toward rear. Tenth tergum heavily sclerotized, arising ventrally as a platelike posterior margin of ninth segment, produced dorsomesally into a long, thin, slightly upturned process which from dorsal view is broad with a rounded apex; dorsolaterally bearing an elongate cercuslike appendage. Clasper with a greatly enlarged basal portion, giving rise to a long, filamentous dorsal process, and a heavily sclerotized, short, hooked ventromesal process. Aedeagus with lateral arm compressed, sclerotized, ending with 4–5 strong spines; mesal tube membranous, with a pointed ventral lip.

Holotype, male.—Argentina, Prov. Rio Negro, Puerto Blest, 3 Dec. 1926, R. C. Shannon. USNM 70430. Paratype.—Same data, 1 ♂.

#### TASIMIIDAE

This family of limnephiloid caddisflies was recently erected (Riek, 1968, J. Aust. Ent. Soc. 7:109–114) for the Australian genus *Tasimia*. On the basis of adult characters the genus had been placed in the Sericostomatidae, but considering the larvae and pupae as well as reexamining the adults, it is quite clear that its affinities are with the Limnephilidae and that a new family is required as proposed by Riek.

In the light of this paper, the position of the Chilean genus *Trichovespula*, whose larvae and pupae are also known (Flint, 1967, Beitr. z. Neotrop. Fauna 5:64–65), has been reconsidered. It is immediately clear that *Trichovespula* is a tasimiid on all key characteristics of the larvae, pupae, and to a lesser degree cases. The adult males also agree except in one characteristic: the Chilean genus has three segmented maxillary palpi, the Australian, four segmented palpi.

The following new genus and species is undoubtedly related to *Trichovespula*, and it too possesses three segmented palpi. It thus

seems that the Chilean genera of the Tasimiidae form the more specialized group, characterized by the reduction of the male maxillary palpi to three segments.

**Charadropsyche**, n. gen.

Male maxillary palpi three segmented, second segment with a large hair pencil; palpi normally held in an anteromesal groove of the face which ends in a projection beneath the antennae. No ocelli. Head dorsally with a pair of trianguloid anteromesal warts, with a pair of very small warts near their posterolateral angles, a pair of elongate, oblique warts posterolaterally, and a wart along posterior margin of each eye; with a mesal, longitudinal suture connected by lateral sutures to posterior angles of posterolateral warts. Mesonotum with a pair of small warts near anterior margin of scutellum, with anteromesal groove very shallow; scutellum with a large mesal wart, but bearing its setae near lateral margins. Spurs 2,4,4. Venation with  $R_{2+3}$  unbranched in fore- and hindwings; M with 3 branches in forewing, 2 in hindwing;  $Cu_1$  forked in both wings; forewing with a broad space, rounded basally, between M and  $Cu_1$ , and a broad space posterior to  $Cu_2$ ; hindwing with 1A bearing a brush of hair. Male genitalia simple; clasper one segmented.

Type-species: *Charadropsyche penicillata*, n. sp.

The genus resembles *Trichovespula* in many respects, especially in the structure of the maxillary palpi, although *Trichovespula* lacks the facial groove. The venation in *Trichovespula* is modified in the male, which makes homologies rather obscure, but both appear to have an unbranched  $R_{2+3}$  in both wings. The male genitalia, especially the cerci, tenth tergum, and aedeagus are similar in the two genera. The claspers are similar in general shape in the two, although clearly two segmented in *Trichovespula*.

**Charadropsyche penicillata**, n. sp.

(Figs. 34-37)

This is the only species known in the genus.

Adult.—Length of forewing, 5.5–6.5 mm. Color uniformly dark brown. Seventh sternum with a mesal process first directed basad, then curving apicad, inflated basally, thin beyond curve. Male genitalia: Ninth segment broad laterally, narrow dorsally. Tenth tergum deeply divided on midline, tergite rather broad and elongate, tip produced into a dorsally directed point. Cercus slightly broader than long. Clasper broadly united to ninth segment basally, upright, elongate, with tip slightly enlarged. Aedeagus tubular basally, with an apical membranous sac bearing a large eversible spine.

Holotype, male.—Chile, Prov. Curico, Estero la Jaula, Los Quenes, 4–18 Jan. 1964, L. E. Peña G. USNM 70432. Paratypes.—Same data, 6♂♂, 4♀♀; same, but 14–18 Feb. 1965, 1♂. Prov. Nuble, Recinto, 4–6 March 1968, Flint & Peña, 1♂.

## LEPTOCERIDAE

**Brachysetodes nublense**, n. sp.

(Fig. 33)

This is another species of *Brachysetodes* with a tripartite clasper, and is probably closest to *B. trifida* Schm. From this and all other species, *nublense* is easily distinguished by the spinose dorsolateral processes of the aedeagus, the more elongate apical arms of the tenth tergum, and the presence of a basomesal lobe on the claspers.

Adult.—Length of forewing, 6 mm. Color of body, legs, antennae, and cephalic hairs, creamy-white; forewing greyish brown, with a cream-colored spot on posterior margin at slightly beyond midlength. Male genitalia: Ninth segment rounded anterolaterally. Cercus elongate, about half length of tenth tergum. Tenth tergum narrow, bearing three pairs of broadened setae dorsally at midlength, beyond which it is divided into a pair of slender gradually diverging arms. Clasper divided into 3 subequal, apical processes, dorsal process with a dorsomesal row of broadened setae; with a mesobasal lobe produced into a point directed cephalad. Aedeagus with base heavily sclerotized, apical portion prolonged and membranous, bearing a pair of short, pointed, basolateral spines and a pair of elongate dorsolateral processes bearing many spinose setae.

Holotype, male.—Chile, Prov. Nuble, Recinto, 4–5 March 1968, Flint & Peña. USNM 70431. Paratypes.—Same data, 18 ♂ 3 ♀; same, but Rio Chillan, near Recinto, 6 March 1968, Flint & Peña, 1 ♂.

## SERICOSTOMATIDAE

**Microthremma caudatum**, n. sp.

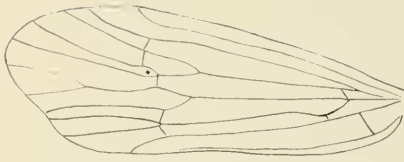
(Figs. 38–40)

This species is closest to *M. griseum* Schm., from which it is distinguished by the apicolateral appendage on the claspers, and the laterally hooked apices of the tenth tergites.

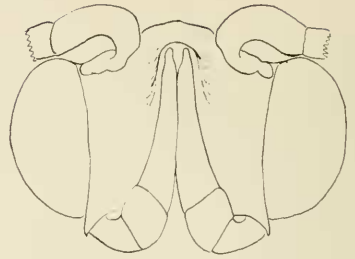
The original figure of the venation of the type-species of *Microthremma*, *crassifimbriata* Schm., is somewhat in error, and the venation is actually very similar to that of *M. caudatum*: i.e., there is a sharp angle in  $R_1$  at the level of branching of  $R_{2+3}$ , and  $R_4$  extends simply to the wing margin (the original figure shows a small apical fork).

Adult.—Length of forewing, 5.5 mm. Color grey, legs and antennae a bit more brownish. Abdomen with large pale areas around setae bases. Seventh sternum with a broad, apicomesal, nail-like process. Male genitalia: Ninth segment rounded anterolaterally with a small dorsomesal flap. Tenth tergum completely divided mesally, lateral half narrowed apically, with tip developed into a laterally directed hook. Cercus small, buttonlike. Clasper broad basally, with a truncate ventromesal lobe, and a fingerlike apicolateral process. Aedeagus tubular, with a pair of large internal spines.

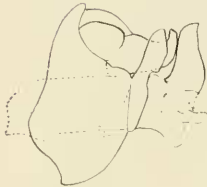
Holotype, male.—Chile, Prov. Concepcion, Fundo Pinares, near Concepcion, 30 Dec. 1965, Flint & Cekalovic. USNM 70433.



34



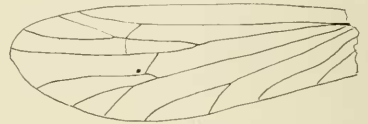
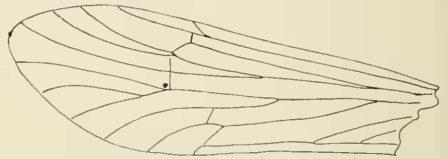
35



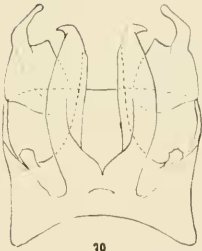
36



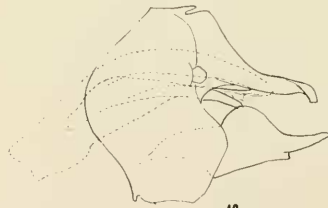
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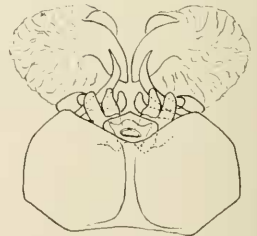
38



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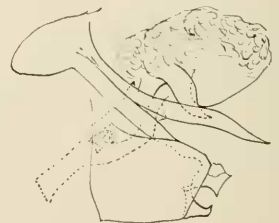
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42



41



43



**Contulma**, n. gen.

Male maxillary palpi five segmented; labial palpi three segmented. Three ocelli present. Head dorsally with a pair of rounded anteromesal warts, and a pair of elongate, oblique warts posterolaterally, and a wart along posterior margin of each eye; with a mesal longitudinal suture on posterior half of head. Mesoscutum without well developed warts; mesoscutellum without clearly defined warts, but seemingly composed of a single large wart with setae borne laterally. Spurs 2,2,4 (one spur of foreleg very small and easily overlooked). Venation with  $R_{2+3}$  unbranched in hindwing,  $R_s$  very short in forewing; r-m very oblique in both wings (so that  $R_s$  appears to arise from M); M with 3 branches in forewing, unbranched in hindwing;  $Cu_1$  forked in both wings. Male genitalia greatly modified, aedeagus with large apical lobes.

Type-species.—*Contulma cranifer*, n. sp.

This genus which is close to *Anomalopsyche*, is also provisionally placed in the Sericostomatidae. Both genera agree in possessing ocelli and five segmented maxillary palpi. The forewings of both have a similar venation, although in *Anomalopsyche*  $R_s$  is several times as long as either branch. In the hindwing, however,  $R_{2+3}$  is deeply forked in *Anomalopsyche* but simple in *Contulma*. The male genitalia are rather simple with the parts easily homologized in *Anomalopsyche*, but very greatly modified in *Contulma*.

The true family placement of these two genera is very unclear. Both possess ocelli and five segmented maxillary palpi, the former being unknown otherwise in the sericostomatids, and the latter being known only in some other Chilean genera and in the females generally. It seems to me that certain other Chilean sericostomatid genera (i.e., *Pseudosericostoma*, *Microthremma*, *Eosericostoma*, and *Austrocentrus* at least) that are non-ocellate, but possess five segmented palpi and reduced venation with the tendency toward the capture of  $R_s$  by M, form a single unit with the ocellate genera. These genera may form a unit (family?), perhaps arising near the common ancestor of the leptocerid and limnephilid lines of the Limnephiloidea. The discovery of the immature stages of these genera may help to establish their affinities more firmly.

**Contulma cranifer**, n. sp.

(Figs. 41–43)

This is the only known species in the genus, and it is easily recognized by its strange genitalia. The homologies of the parts of the genitalia

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Figs. 34–37. *Charadropsyche penicillata*, n. gen., n. sp.: 34, wings; 35, head, anterior; 36, ♂ genitalia, lateral; 37, same, dorsal. Figs. 38–40. *Microthremma caudatum* n. sp.: 38, wings; 39, ♂ genitalia, dorsal; 40, same, lateral. Figs. 41–43. *Contulma cranifer* n. gen., n. sp.: 41, wings; 42, ♂ genitalia, ventral; 43, same, lateral.

are not at all certain, and, although I have used the classical terminology, this is no more than a preliminary interpretation.

Adult.—Length of forewing, 6 mm. Color grey, legs pale brownish. Abdomen without sternal processes. Male genitalia: Ninth sternum large, posterior margin obliquely angulate laterally, with a smooth, impressed midventral line. Ninth tergum smooth, small, rounded anteriorly; with a bandlike lateral sclerite continuous along dorsal margin of sternum. Tenth tergite a long, swordlike process directed posteriorly beneath lobes of aedeagus. Claspers small, with an apicoventral point, and a terete, membranous lateral lobe; mesoventrally with a structure, trianguloid in ventral aspect, complex internally. Aedeagus with a tubular basal portion; apex developed into a pair of crenulate, membranous, hemispherical lobes which give rise to a basolateral process curving beneath lobes and becoming heavily sclerotized apically, apicomesally with a rounded, membranous lobe (apical structures do not seem to be retractable within tubular portion).

Holotype, male.—Chile, Prov. Malleco, Rio Manzanares, near Puren, 2 Jan. 1966, Flint & Cekalovic. USNM 70434. Paratypes.—Same data, 1 ♂, 3 ♀. Prov. Malleco, Parque Nacional Contulmo, 2 Jan. 1966, Flint & Cekalovic, 2 ♂ ♂, 1 ♀. Prov. Cautin, Rio Cautin, Cajon, 3 Jan. 1966, Flint & Cekalovic, 1 ♀.

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WEST INDIAN WASPS OF THE SUBFAMILY PRISTOCERINAE  
(HYMENOPTERA: BETHYLIDAE)

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ABSTRACT—Three genera of Pristocerinae occur in the West Indies, but all three have been known from only a few specimens. Much recently collected material from Cuba and from Jamaica indicates that there are several species of Pristocerinae on each island, with no species reported from any two islands of the Greater Antilles. Female Pristocerinae are apterous, and hence have poor dispersal powers as compared to Epyrinae and Bethylinae, several species of which occur widely in the West Indies. In the genus *Pseudisobrachium*, previously unrecorded from Cuba and Jamaica, 11 new species are here described, 3 from Cuba and 8 from Jamaica. In *Apenesia*, 4 new species are here described, 3 from Jamaica and 1 from Cuba, and new records are presented for a previously described species. In *Dissomphalus* 1 new species is described from Jamaica and 1 from Cuba.

In my Synopsis of the American Bethylidae (Evans, 1964) I recorded 33 species of Bethylidae from the West Indies (not including Trinidad). In a recent paper (Evans, 1969), I have reported 19 species from the island of Dominica alone, 13 of them previously